PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-067044
(43)Date of publication of application : 11.03.1994

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(51)Int.Cl. G02B 6/12
H04B 10/02
// H05K 1/02

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(21)Application number : 04-243997
(22)Date of filing : 21.08.1992

(71)Applicant : FURUKAWA ELECTRIC CO LTD:THE
(72)Inventor : YAMAMOTO ICHIRO
AMANO TOSHIAKI
NISHIBASHI ATSUSHI

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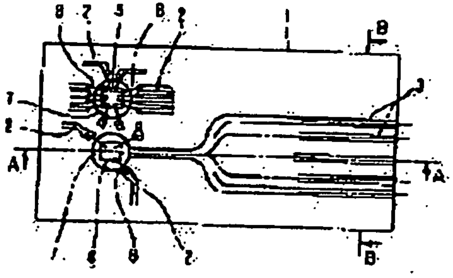
(54) OPTICAL CIRCUIT AND ELECTRIC CIRCUIT MIXED SUBSTRATE

(57)Abstract:

PURPOSE: To obtain the optical circuit and electric circuit mixed substrate which facilitates size reduction, high-speed processing of light signals, and variation in light signal wavelength and is superior in economy by mounting respective functional elements on the substrate in a bare chip state.

CONSTITUTION: An electric circuit 2 and an optical circuit 3 are formed on the surface of a semiconductor substrate 1 such as an Si substrate and a light emitting element such as an LED (or light receiving element such as a PD) and a communication control element 5 are mounted in a bare chip state. The electric circuit 2 is formed of aluminum wiring, etc., formed in specific pattern by, for example, a lift-off. The optical circuit 3, on the other hand, is formed by forming grooves in, for example, the substrate 1 by etching, etc., and embedding an organic material such as polyimide in the grooves by spin coating, etc. Further, the light emitting element 3 and communication control element 5 are fixed in a recessed part 7 formed at a specific position on the substrate 1 and the electrodes of the light emitting element 4 and communication control element 5 and the electric circuit 2 are connected with a bonding wire (or TAB lead) 8.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]